

Tense, Events, and Extraction from Adjuncts

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Ling-Lunch, MIT, 6/12/07

1 Introduction

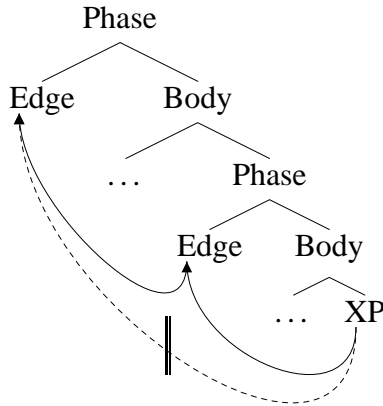
This talk probably has too many aims, but we'll see how we go...

- An argument for a class of absolute, CED-style, non-phase-like locality domains (what I mean by this will hopefully become clearer in section 2 below).
- A quick suggestion that (a) no single such notion should carry all the empirical burden that the CED carries; (b) minimalist reformulations of the CED within narrow syntax aren't up to the job (also in section 2).
- An attempt to develop a partial alternative, based on an interfacey notion of *domain* (the rest of the talk).

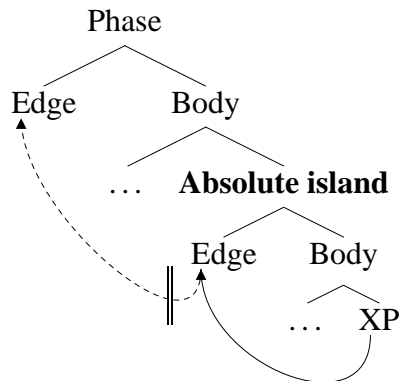
2 The Argument for Domains

2.1 Two Types of Locality Theory

- (1)
 - a. **The *absolute islands* approach:** There are certain domains that you just can't move out of, full stop. E.g. Ross (1967), Huang (1982), Uriagereka (1999).
 - b. **The *edges* approach:** Movement out of certain domains is only possible via their edge. E.g. Chomsky (1973, 1986, 2000, 2001), Fox and Pesetsky (2005), Rackowski and Richards (2005).
- (2) The edges approach can force successive cyclic movement, so if we believe the battery of evidence in favour of successive cyclic movement (complementiser alternations, inversion patterns, reconstruction,...) then the edges approach has independent support.



- (3) So the question is, do we also need absolute islands?
- a. The parsimonious answer would be “no”. After all, the edges approach can do a pretty good job of mimicking the effects of the absolute islands approach: if, for some reason, XP cannot get to the edge of a phase (e.g. because this phase happens not to have an edge, or because its head doesn’t have a P/Edge-feature), then it can’t move further.¹
 - b. However, there is one configuration which seems to require an absolute notion of *island*: if XP can move to the edge of a domain, but can’t move any further, then we have something that at least looks a lot like an absolute island.



- (4) This is exactly what we find, in Early Modern English. . .

2.2 How to Spot an Absolute Island in the Wild

- (5) a. These examples are mainly drawn from the unparsed Helsinki Corpus, bolstered by examples observed in other texts and passed on to me.² They span a period from c.1450–1850, but with a concentration in the late 16th and early 17th centuries.
- b. There won’t be even the faintest whiff of a diachronic analysis here: please treat as you would any other synchronic data (except for the usual pitfalls concerning finite

¹Many modern theories along broadly these lines (notably Fox and Pesetsky 2005) do not work in exactly these terms, but similar statements can be formulated to make the same point.

²Thank you very much indeed, Jack Hoeksema and Liliane Haegeman!

corpora and inaccessibility of native speaker intuitions).

(6) **The basic type of example**

- a. In the very heat of these hurliments, the English burnt one of the milles beyond the water, and the daie following the other, [[which, when the French endeavoured to save __], they were so galed by two demie-culveringes from the trenches, that they were constreyned to abandon the enterprise].
- b. Sweet Harte I haue sent by this bearer fourteen woodcockes and a brace of feasants which came to me by chance very fortunately. If you will, you may send them to my Lady Knyvett, [[which if you doe __], I pray lett this bearer cary them and remember my humble servis to my Lor: and Lady].

(7) **Two possible structures to choose between**

- a. [DP [DPthe other] [CP which C [TP [CP (t) when the French endeavoured to save t] [TP they were ...]]]]
- b. [DP [DPthe other] [CP [CP which when the French endeavoured to save t] C [TP they were ...]]]]

- (8) a. The *island-external* analysis (7a) is straightforwardly compatible with the edges approach, if tenable: the landing site at the edge of the island is like any other intermediate landing site.
- b. The *island-internal* analysis (7b) needs something more: once *which* is at the edge of the relative clause, what would stop it moving further?

- (9) The straightforward argument against the island-external analysis is that it involves extraction from a strong island, but that's begging the question to some extent: if the edges approach would define a strong island as a locality domain where XP doesn't have access to the edge, and if *which* clearly can exceptionally reach that edge in these cases, then bets are off as to whether it could move further or not.

- (10) A stronger argument against the island-external analysis comes from the following generalisation:

Examples like (6) are only possible when the strong island occurs to the left of the matrix, and the *wh*-phrase is immediately left-adjacent to the rest of the strong island.

(11) **Two things we don't find:**

- a. Parallel examples involving rightward islands;
- b. Cases where *that* intervenes between *wh* and the rest of the island.

(12) **No parallel examples involving rightward islands**

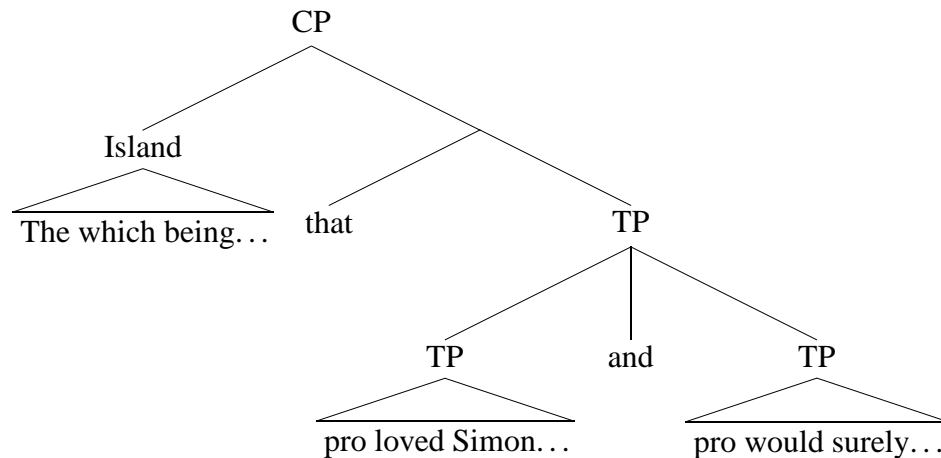
- a. Both the edges approach and the absolute islands approach predict something like this to exist.
 - (i) A married Gentleman coming through Canterbury, his Horse threw him, [which a young Gentlewoman seeing __] fell a laughing.
 - (ii) *Island-external analysis*: (*)his Horse threw him, which a young Gentlewoman fell a laughing [t seeing t].
 - (iii) *Island-internal analysis*: (*)his Horse threw him, a young Gentlewoman fell a

laughing [which seeing *t*].

- b. Neither of these cases exist (against 70-200 cases like (12ai)). But why not?
 - (i) No obvious place to look concerning (12aii) for the edges approach: once *which* reaches an edge position, it should become visible to some $C_{[Wh]}$ or $v_{[Wh]}$ probe, and ultimately find its way to the top of the relative clause.
 - (ii) We'll see below that there's a fairly natural reason, compatible with the absolute islands approach, why (12aiii) doesn't exist, though.

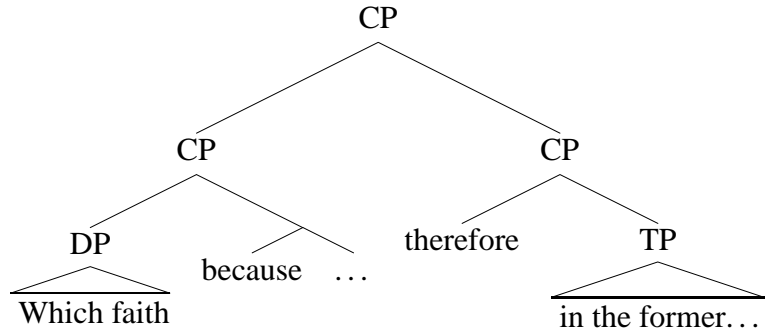
(13) **No cases where *that* intervenes between *wh* and the rest of the island**

- a. Doubly filled COMPs are very strongly attested in EModE (Keyser 1975), but an overt C^0 never intervenes between *wh* and the rest of the island.
 - (i) He which that hath the shortest shall begin. (Keyser 1975:9)
 - (ii) (*)his Horse threw him, [which that [*t* a young Gentlewoman seeing *t*] fell a laughing].
- b. On its own, this could be a COMP-trace effect (EModE does seem to obey the COMP-trace filter pretty strictly), but the existence of cases like the following says otherwise.
 - (i) Ther was a man of good reputation and wealth, that dwelte not far from Simon's master, that had a proper fine maiden to his only daughter, [the which being but yonge of yeares and younger then Simon, that loved Simon wonderfull welle, and wold suerly see him once a daie, or ells she wold be sicke].³

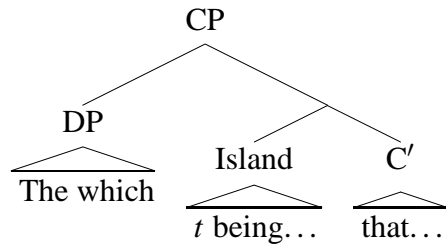


- (ii) they would earnestly contend to maintaine the faith; which was once delivered vnto the Saints. [Which faith because wee cannot maintaine __ except wee knowe perfectly, first against whom, secondly in what sort it must be maintained; therefore in the former three verses of that parcell of Scripture which I haue read, the enimies of the crosse of Christ are plainly described; and in the later two, they that loue the Lord Iesus haue a sweet lesson giuen them how to strengthen & stablish themselues in the faith]

³These are admittedly rare, though, and the few examples I have tend to be convoluted like this.



c. What about the following?



Here we would have two problems: (i) how do we deal with multiple [Spec,C]s in only this construction? (ii) how do we motivate the universal leftward position of the rest of the island if *wh* is capable of moving out of it (i.e. why would *wh* only be capable of moving out of the island once that island is itself in [Spec,C]?)

d. Neither of these pieces of evidence strike me as rock solid, because of the rarity of cases like (13bi) and the fact that cases like (13bii) require some finer analysis of the CP layer on either approach than the rather arbitrary assumptions here, which would possibly allow some wiggle room for the island-external approach, but the most plausible generalisation is that we don't find C^0 intervening between *wh* and the rest of the island, and we at least occasionally find it intervening between the island and the rest of the clause. This favours the island-internal analysis, and therefore poses a problem for the edges approach.

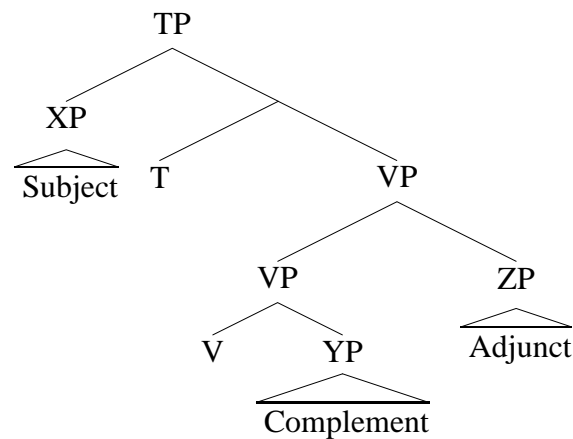
(14) **One possible way of spelling this out:**

- a. Feature percolation is possible from [Spec,X] to XP (possibly via X^0).
- b. Feature percolation to XP is not possible from more deeply embedded positions within XP.
- c. The C^0 (etc.) probe cannot see into XP — *not even its edge* — but can see features on the XP node itself.
- d. So C^0 can't agree with [Spec,X], only with XP, and only XP can move as a result.
- e. There's no extraction from rightward islands because that would involve agreeing with [Spec,X]. There's no rightward islands with *wh* at their left edge because C^0 in relative clauses always induces movement in English.
- f. There's no *that* intervening between *wh* and the rest of the island because it would need discontinuous constituents: bits of matrix CP making themselves at home in the middle of the island. But we do find C^0 after the island, because that's where it belongs, after movement of XP to [Spec,C].

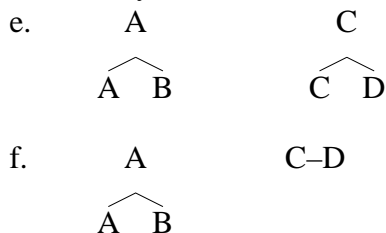
- (15) But this crucially relies on the assumption that, even when XP has an edge position [Spec,X], and even when a probe can see XP, the probe can't see [Spec,X]. I take this as an argument for absolute islands.

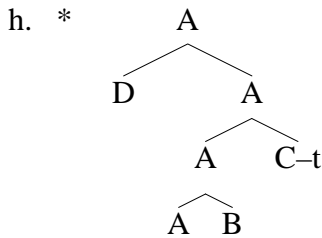
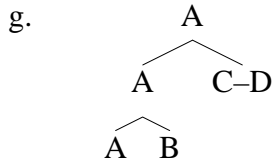
2.3 On Multiple Spell Out and the CED

- (16) There is one family of theories that aims to derive an absolute islands approach to CED effects from basic properties of Merge, namely the Multiple Spell-Out theory of Uriagereka (1999) and related ideas in Johnson (2002), van de Koot (2004), Zwart (2007), Müller (2007), etc. I want to quickly show why I think these are not up to the job.
- (17) The basic point of these: what subjects and adjuncts (the canonical CED islands) have in common is that (a) they are phrases; (b) their sisters are phrases; (c) their sisters project.



- (18) The basic strategy: tell some story about Merge / projection that means that nonprojecting phrasal sisters of phrases are absolute islands. E.g. Uriagereka (1999):
- Merge takes a lexical item and attaches it to a tree, making a larger tree;
 - This means that Merge has problems when it has to join together two syntactically complex objects (neither is present in the lexicon — rather, they exist in separate “derivational workspaces”);
 - So, in such a case, you need to spell out the nonprojecting sister, essentially making it syntactically atomic;
 - And you can't move out of syntactically atomic things, so this creates an island.





(19) Two basic problems:

- a. Tying CED effects to such fundamental properties of structure-building leaves very little room for manoeuvre in the case of counterexamples to the CED;
- b. In languages with counterexamples to the CED, those counterexamples do not cover the full empirical domain of the MSO theory, suggesting that a unified analysis covering all nonprojecting phrasal sisters of phrases may be too general.

(20) **A language can allow extraction from subjects, while blocking extraction from adjuncts.** E.g. Russian:⁴

- a. S kem by ty xotel čtoby [govorit' __] bylo by odno udovol'stvie?
with whom SUBJ you wanted that-SUBJ to-speak were SUBJ one pleasure
“With whom would you want that [to speak __] were sheer pleasure?” (Stepanov 2007:91)
- b. ??Komu Ivan ušol [ne posvoniv __]?
Who.DAT John left not call.ADV
“Who did John leave [without calling __]?”

(21) **A language can allow extraction from adjuncts, while blocking (most cases of) extraction from subjects.** E.g. English (abstracting away from the marginal cases of extraction from internal subjects discussed by Sauerland and Elbourne 2002 *et al.*)

- a. *What did [John whistling __] drive Mary crazy?
- b. What did John drive Mary crazy [whistling __]?

(22) **The distribution of exceptions to the CED I: subjects in Russian.** I haven't investigated this very thoroughly, but at least the following *prima facie* candidates are out there:

- a. A clause intervening between *wh*-possessor and the rest of a DP:
 - (i) Čja ty думаеш собака укусила Марию?
Whose.NOM you think dog.NOM bit Mary.ACC
“Whose dog do you think bit Mary?”

These examples are probably intrusion of a parenthetical element rather than genuine extraction: (a) extraction from subordinate clauses is otherwise only possible with the

⁴One native speaker accepts this adjunct example, which may cast doubt on this data point. Three others reject it outright, though. I'm in the process of gathering more judgements...

subjunctive complementiser *čtoby*; (b) these intervening clauses degrade rapidly as a parenthetical interpretation becomes less plausible:

- (ii) *Čja ty xotela čtoby sobaka ukusila Mariju?
 Whose.NOM you wanted comp.SUBJ dog.NOM bit Maria.ACC
 “Whose dog did you want to bite Mary?”

b. Extraction from a postverbal subject is pretty free, at least in monoclausal examples:

- (iii) Kakaja tebya ukusila sobaka?
 Which.NOM you.ACC bit dog.NOM
 “Which dog bit you?”

This genuinely looks like extraction, but its status as a counterexample to the CED is less clear: we could conceivably try to argue for a VP-internal position, governed by V in the canonical direction, etc. (though I haven’t actually tried to do this).

c. Stepanov’s examples of extraction from a nonfinite preverbal clausal subject look pretty convincing to me.

- (iv) S kem by ty xotel čtoby [govorit’ __] bylo by odno
 with whom SUBJ you wanted that-SUBJ to-speak were SUBJ one
 udovol’stvie?
 pleasure
 “With whom would you want that [to speak __] were sheer pleasure?” (Stepanov 2007:91)

d. So it looks like the type of subject (nominal vs. clausal), and possibly linear order and the type of constituent being extracted, make a difference here. Which looks plausibly syntactic, possibly with a dash of PF (linear order).

(23) **The distribution of exceptions to the CED II: subjects in English**, at least according to Sauerland and Elbourne (2002):⁵ extraction is possible from a subject if (a) that subject is derived, and (b) that subject interacts scopally with some other element, with respect to which (c) it takes narrow scope.

- a. (i) *That’s the book Op_j that [a chapter of t_j]_i seems [t'_i to have been assigned to John t_i].
 (ii) ?That’s the book Op_j that [a chapter of t_j]_i seems [t'_i to have been assigned to every student t_i].
- b. (i) *?Which constraint are [good examples of __] always provided?
 (ii) Which constraint are [good examples of __] always sought? (Sauerland and Elbourne 2002:304)
- c. So here, we’re looking at something narrowly syntactic (base-generated vs. derived subjects) plus an LF component (scope).⁶

(24) **The distribution of exceptions to the CED III: adjuncts in English**. That’s the job of the rest of the talk. But, looking ahead a little:

⁵This admits a proper subset of the cases that Chomsky (2004) admits. My judgements are, if anything, more restrictive still, but this is the closest published approximation I’ve seen.

⁶If Sauerland and Elbourne’s theory is correct, the scope distinctions result from a distinction between movement in narrow syntax and movement at PF, giving rise to an even more interface-heavy theory, but I abstract away from that here.

- a. There are some factors which might be narrowly syntactic (adjuncts are always weak islands, even when some extraction is possible. If Starke’s 2001 attempt to reduce weak islands to feature visibility — *cf.* also the many minimalist treatments of *wh*-islands, etc. — is successful, then this could be syntax, but there are alternatives, e.g. Szabolcsi and Zwarts 1993). I won’t talk about these here.
 - b. But these factors are clearly not the same as for subjects in English or Russian. Moreover, I’m going to argue below for a link between event structure and the possibility of extraction which is utterly puzzling on a post-CED approach.
- (25) Conclusion: The patterns of extraction from subjects differ (a) from language to language, and (b) from patterns of extraction from adjuncts. Whatever our post-CED theory comes to look like, it has to be flexible enough to cover these facts.

2.4 Interim Summary

- (26)
- a. We need some notion of *absolute island* in our theory of locality.
 - b. The only obvious family of syntactic absolute island theories within the minimalist program are going to struggle to account for the full range of data.
 - c. This suggests we need to look elsewhere, and specifically in this talk, I’ll be advocating a more interface-based, non-unified notion of absolute islands (as opposed to, say, Chomsky 2004 or Stepanov 2007, who seem to be advocating a nonunified, but entirely narrow-syntactic, post-CED theory).
 - d. I’m not going to try and offer a full replacement to the CED here. Things I won’t touch:
 - (i) Anything about subjects (though there are plenty of theories out there that exclude some or all cases of extraction from subjects without saying anything about adjuncts, especially Stepanov 2007 and the raft of theories of left branch effects based ultimately on Kayne 1983).
 - (ii) Most classes of legitimate extraction from adjuncts in English (I covered one other class in my LF reading group talk here, and a few others are considered in my thesis).
 - (iii) Any crosslinguistic considerations about extraction from adjuncts (I can tell you what I know in the question period, but I really know very little. . .).
 - e. In other words, I won’t touch most things, but I’ll try to at least give a sketch of one corner of how this might work.

3 Extraction from Bare Present Participial Adjuncts

3.1 Introduction

- (27) We are now leaving EModE behind. I have no evidence that any of the following was possible or impossible in EModE.
- (28) a. Who did Mary kiss *t* [after John went home]?

- b. *Who did John go home [after Mary kissed *t*]?
- (29) a. That's the symphony that Schubert died [without finishing *t*].
 b. Who did you go to Girona [in order to meet *t*]?
 c. How many of the book reports did the teacher smile [after reading *t*]? (Levine and Sag 2003:16–17, following Pollard and Sag 1994)
- (30) **Generalisation:** Extraction is only ever possible from an adjunct if that adjunct is untensed (see also Szabolcsi 2006).
- (31) a. *Who did John go home [after he kissed *t*]?
 b. ?Who did John go home [after kissing *t*]?
- (32) **Question:** Why would tense make a difference?
- (33) In principle, we may take:
 a. **A syntactic approach:** There is something special about T(P) that interacts with adjunction to create an island.⁷
 b. **A semantic approach:** There is something special about the semantic effect of tense that makes extraction from a tensed adjunct impossible.
- (34) **The plan:** Not all untensed adjuncts allow extraction. Look at the ban on extraction from tensed adjuncts in this wider context and see how the two approaches fare. In particular, I will concentrate on a class of Bare Present Participial Adjuncts, characterised by (a) being built around a present participle; (b) not being introduced by a preposition, etc. (33a) is certainly the more orthodox approach, but it will struggle to capture patterns we find in extraction from this class.
- (35) A word of caution before we proceed: there are loads of factors influencing the acceptability of extraction from BPPAs in ways that I don't even start to understand. To name just one, a lot of unacceptable examples are improved by the presence of some material between V and the adjunct. Originally, I thought I could describe this in event-structural terms as well. Now, I'm just very very puzzled by it.
 a. (i) *What does John work [whistling __]?
 (ii) ?What does John do his work [whistling __]?
 b. (i) (Unlike most postdocs,) I dance screaming obscenities.
 (ii) *What does John dance [whistling __]?
 (iii) What does John dance around [whistling __]?
 (iv) ?What did John just dance across the room [whistling __]?

3.2 The Interpretive Puzzle

- (36) Compare the following.
 a. What did John drive Mary crazy [whistling *t*]?
 b. What did John arrive [whistling *t*]?

⁷We have a long history of saying that there's something special about T(P): the EPP, barriers, etc. So a condition like this would be in good company.

- (37) Although both (36a) and (36b) are grammatical, there is a clear interpretive difference between the two. (36a) can only be interpreted as in (37a).
- a. What is the x such that John whistling x caused Mary to go crazy?
- However, (36b) *cannot* be interpreted as in (37i) — instead, the relation between matrix and adjunct events is purely temporal, something like (37ii).
- b. (i) What is the x such that John whistling x caused him to arrive?
(ii) What is the x such that John was whistling x immediately before he arrived?⁸
- (38) Note the different aspectual classes of the matrix VPs.
- a. **(36a)** is typical of the interpretations we find when the matrix VP is an **accomplishment**.
- b. **(36b)** is typical of the interpretations we find when the matrix VP is an **achievement**.
- (39) These readings are also preferred in corresponding declaratives:
- a. John drove Mary crazy whistling hornpipes.
- b. John arrived whistling the *Marseillaise*.
- (40) However, other declaratives constructed from VPs of the same aspectual classes do not have these interpretations, and do not allow extraction either.
- a. John painted this picture eating apples \neq John eating apples caused him to paint a picture.
- b. *What did John paint this picture eating?
- c. John came home dripping mud all over the living room carpet \neq John was dripping mud all over the living room carpet immediately before he came home.
- d. ??What did John come home dripping mud all over? (* if the answer is *the living room carpet*).
- (41) **What forces these interpretive asymmetries between declaratives and interrogatives, and accomplishments and achievements?**

3.3 The Unlikely Antilocality Puzzle

- (42) *Antilocality* (Grohmann 2003, Abels 2003): certain syntactic operations are impossible when they relate elements which are structurally too close: within certain subdomains of the clause (Grohmann) or within a single projection (Abels).
- (43) Bare present participial adjuncts also sometimes appear to show antilocality effects:
- a. ??What did John drive Mary crazy [fixing t]?
b. What did John drive Mary crazy [trying [to fix t]]?
- (44) But what about this: . . .
- a. What did John drive Mary crazy [whistling t]?
. . . or *this*: . . .

⁸To see that it must be *immediately before*, rather than *while*, consider *What did John die whistling?*. The whistling and the being dead cannot be simultaneous.

b. *What did John drive Mary crazy [continuing [to fix t]]?

...or *this*:

c. (i) What did John talk [about [fixing t]]?

(ii) What did John talk [about [trying [to fix t]]]?

(45) An antilocality approach to (43) would need sensitivity not only to distances traversed by movement, but also to very local relations among nodes along the way (adjunction or not, the choice of embedding verb, the choice of participial verb,...).

(46) But how else could we account for (43) syntactically? Apart from antilocality, the general rule of syntactic locality is this:

Things might get in the way. More structure = more potential interveners.

(47) Here, on the other hand, *less* syntactic structure leads to lower acceptability.

(48) **What else could be behind such a pattern?**

3.4 Where We're Going

(49) **The Single Event Condition: Events define absolute islands for *wh*-movement.**

An instance of *wh*-movement is acceptable only if the minimal constituent containing the head and the foot of the chain describes a single event.

(50) To clarify: I assume, following Bach (1986) and countless others, that events can stand in part-whole relations with other events. To borrow some terminology from Ramchand (2006), a *macroevent* can be composed of multiple *subevents*. All that (49) claims is that the constituent containing the head and foot of the *wh*-chain must denote a macroevent. Whether or not that macroevent is composed of multiple subevents is immaterial. So (50a) and (50b) both meet condition (49), but (50c) doesn't.

a. $\exists E.(\dots E\dots)$

b. $\exists E.(\dots \exists e_1.(\dots e_1\dots) \wedge \exists e_2.(\dots e_2\dots) \wedge R(E, e_1, e_2)\dots)$

c. $\exists E_1.(\dots E_1\dots) \wedge \exists E_2.(\dots E_2\dots)$

(51) **Claim:** (49) can derive the islandhood of tensed adjuncts, and give us answers to the interpretive puzzle and the unlikely antilocality puzzle for free.

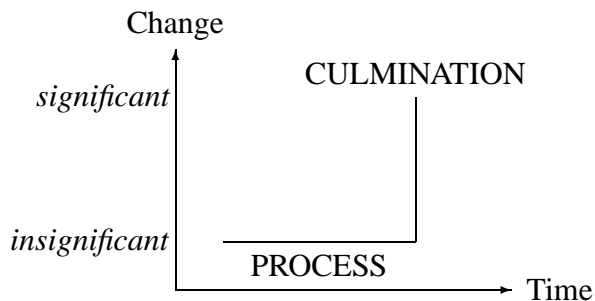
(52) How this plays out for the cases at issue here: the events described by the matrix VP and by the adjunct must each form part of an internally complex event, if extraction is to be possible. Appropriate event structures must exist, and it should be pragmatically plausible that the events in question can be related in the necessary way.

(53) So first, we need an independently motivated theory of the event structures of aspectual classes and beyond. Then we can see how this squares with the locality data.

4 Event Decomposition: The Basics

4.1 A Very Rough Model of Aspectual Classes

- (54) **The progressive test:** *Accomplishments* and *activities* are acceptable in the progressive. *Achievements* and *states* aren't.
- I am running a mile (drawing a circle, building a house,...).
 - I am running (writing, working,...).
 - *I am spotting the plane (appearing, blinking,...).
 - *I am knowing the answer (loving you, understanding antisymmetry,...).
- (55) **The *wh* test:** *Activities* and *states* can form *for how long* questions. *Accomplishments* and *achievements* can't.
- #For how long did he run a mile (draw a circle, build a house,...)?
 - For how long did he run (write, work,...)?
 - #For how long did you spot the plane (appear, blink,...)?
 - For how long did you know the answer (love me, understand antisymmetry,...)?
- (56) The four classes can be seen in terms of the presence or absence of two components, or subevents: a *preparatory process* and a *culmination*, where the process immediately precedes, and sometimes directly causes, the culmination.



- (57) a. **State**=0
b. **Activity**=PROCESS
c. **Accomplishment**=PROCESS + CULMINATION
d. **Achievement**=...
- (58) All achievements involve a culmination, but some (*true achievements*) arguably involve a preparatory process too (*cf.* Pustejovsky 1991), while others (*points*) don't.
- (59) We can talk about why true achievements aren't accomplishments (and *vice versa*) but it gets complicated...
- (60) a. To form a progressive, you need to have a preparatory process.
b. To form a *for how long* question, you need to *not* have a culmination.
- (61) a. John is arriving any minute now.
b. I'm coming back tomorrow.

- c. *I'm noticing the carnage at the moment / any minute now.
 - d. *John is hiccupping tomorrow.
- (62) Note that this distinction chimes with the extraction data:
- a. What did John come back talking about?
 - b. *What did John notice the carnage looking through?
- (63) The generalisation then seems to be that extraction is only possible from a BPPA if it modifies a matrix VP denoting process + culmination:
- a. What did John drive Mary crazy whistling?
 - b. What did John arrive whistling?
 - c. *What did John notice the carnage whistling?
 - d. *What does John work whistling?⁹
 - e. *Which magical melody does John know Georgian whistling?
- (64) a. Assume that predicates are *persistent* (Lasnik's 1992 term): if P is true of an interval t or an event e then it's also true of any interval t' ≥ t or any event e' ≥ e.
- b. Assume further that the *only* internally complex events are those with structures as in (56) (this is probably too strong, because of phenomena like iteration of a telic event producing an atelic event, but anyway. . .).
- c. Finally, assume that no event is both punctual and temporally extended.
- d. Then the only part of the decompositional representations of the aspectual classes that we need to represent explicitly in the semantics is that multiple distinct descriptions are sometimes associated with a single event variable. The combination of the previous three assumptions will entail that these descriptions also apply to subevents, organised as in (56).
- (i) John draw a circle: draw(j, e) ∧ BECOME(∃x.circle(x))(e)
 - (ii) John arrive (at x): P(e) ∧ BECOME(AT(j, x))(e)
- If multiple predicates of the same event variable cannot be arranged in accordance with (56) then the event description is ill-formed.

4.2 Two Covert Arguments

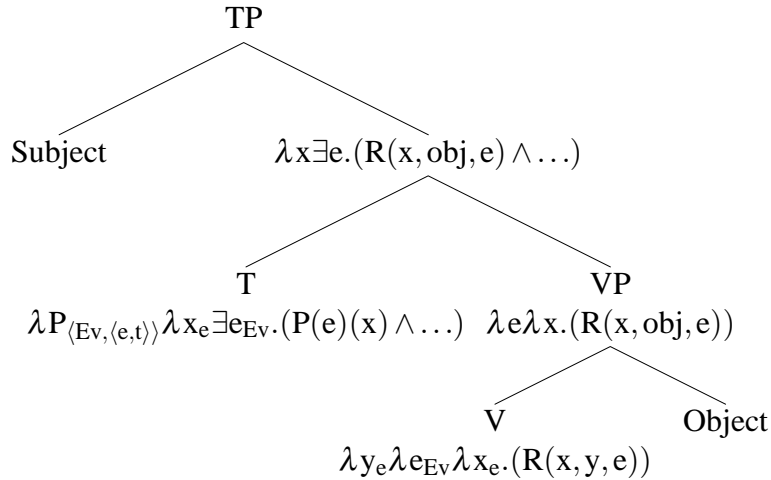
(65) A Simple Theory of Event Variables in Phrase Structure

'[W]e can conjecture that the position *E* of the thematic grid of the verb is discharged at the point where VP meets Infl. The interpretation is existential generalization over the *E*-position.' (Higginbotham 1985:561)

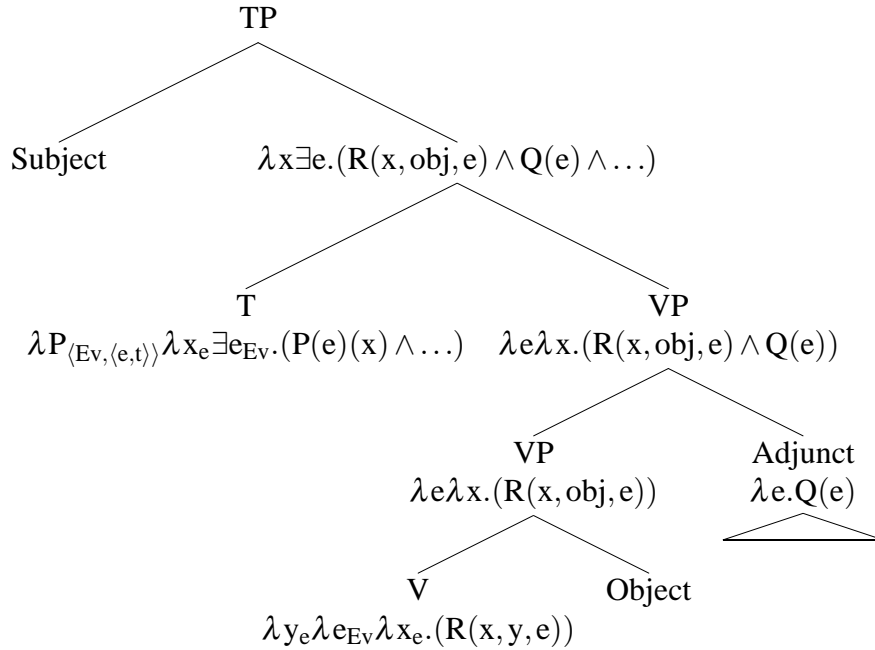
In other words:

- a. Abstracted event variables are introduced by certain lexical predicates (canonically, verbs).
- b. They are existentially quantified by Infl (=T in the terms of the rest of this handout).

⁹This is where the counterexamples listed in (35) cause a real headache.



- c. If we follow Kratzer (1996), Heim and Kratzer (1998), various modes of combination (Predicate Modification, Event Identification) allow us to predicate further properties of this event variable:¹⁰

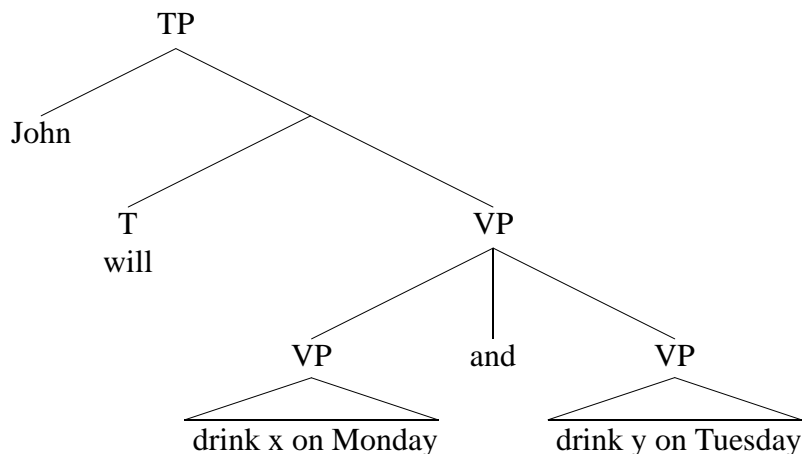


(66) **A Reason Why We Need Something More¹¹**

- a. John will drink tea on Monday and drink coffee on Tuesday.
- b. John will drink coffee on Monday and drink tea on Tuesday.
- c. Rough structure:

¹⁰Exactly how this works in terms of such operations would depend on specific choices about position of Merge of the subject w.r.t. the adjunct, etc, which I want to leave to one side here, as it's orthogonal to the main point.

¹¹I'm far from the first person to make a suggestion like this. von Stechow (2002) argued for a division along these lines at length, similar ideas are thoroughly worked out in Lasnik (1992), and ideas along these lines can be found going right back to at least Kamp (1979). This is just the simplest argument I know of.

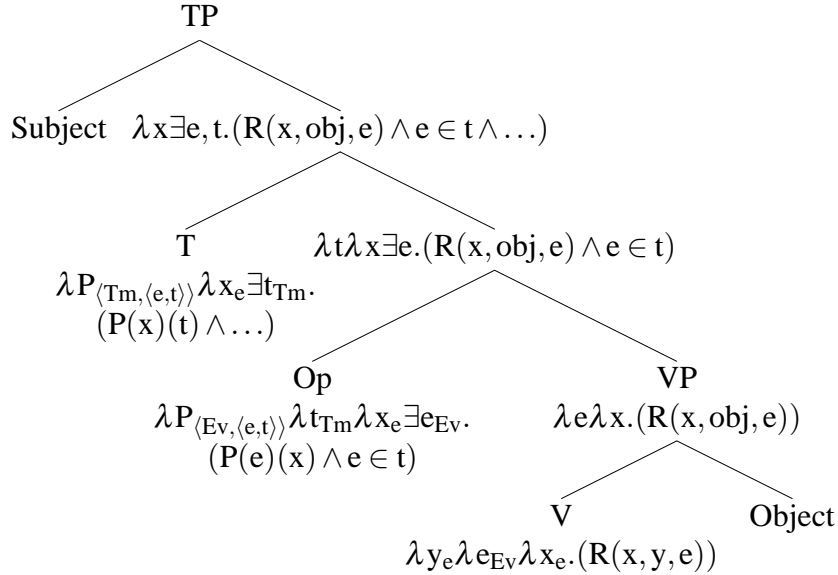


- d. *Will* is only there to show that the coordination is below T' , and so below the position where the event variable would be existentially quantified on Higginbotham's theory. I'll ignore its semantic contribution in what follows.
- e. On the Davidson theory of modification of action sentences, as instantiated syntactically by Higginbotham, modifiers like *on Monday/on Tuesday* are naturally treated as predicates of events, but that has drastic consequences.
- f. (i) $\exists e.(\text{drink}(j, \text{tea}, e) \wedge \text{on}(e, \text{Mon}) \wedge \text{drink}(j, \text{coffee}, e) \wedge \text{on}(e, \text{Tue}))$
 (ii) $\exists e.(\text{drink}(j, \text{coffee}, e) \wedge \text{on}(e, \text{Mon}) \wedge \text{drink}(j, \text{tea}, e) \wedge \text{on}(e, \text{Tue}))$
- g. Whether we predict these to be true or false in situations where (66a) and (66b) are true is debatable (it depends on what we count as one event). But what is clear is that they are truth-conditionally equivalent, unlike (66a) and (66b).

(67) **A proposal:**

- a. Assume that at some point in the derivation, we stop manipulating predicates of events, and start manipulating predicates of *times* (intervals, whatever).
- b. We can cash this intuition out in various ways. It doesn't really matter here, but for concreteness, assume that an operator existentially quantifies the event variable e , introduces a new variable t , ranging over times, and stipulates that e goes on at t . I'll represent the operator in phrase structure trees here, for clarity, but this is just for concreteness — the usual range of options is available and I have no evidence that the operator actually has any phrase-structural reality.

c.

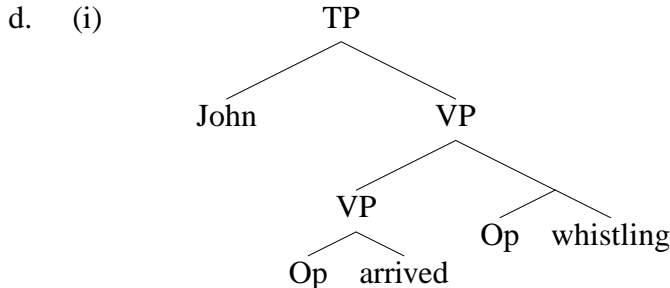


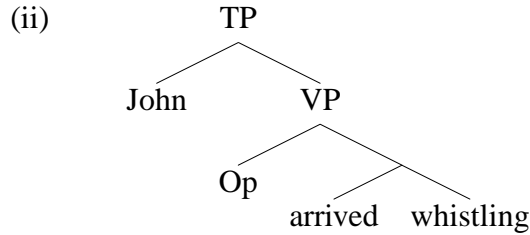
(68) **Then we can choose to conjoin and / or modify predicates either above or below Op.** Here, we coordinate above Op and modify below Op, so that the two VPs describe distinct events, each associated with its own operator.

- a. (i) [TP John will [VP[VP Op drink tea on Monday] and [VP Op drink coffee on Tuesday]]]
- (ii) $\exists e_1, e_2, t. (\text{drink}(j, \text{tea}, e_1) \wedge \text{on}(e_1, \text{Mon}) \wedge \text{drink}(j, \text{coffee}, e_2) \wedge \text{on}(e_2, \text{Tue}) \wedge e_1 \in t \wedge e_2 \in t \wedge n < t)$
- b. (i) [TP John will [VP[VP Op drink coffee on Monday] and [VP Op drink tea on Tuesday]]]
- (ii) $\exists e_1, e_2, t. (\text{drink}(j, \text{coffee}, e_1) \wedge \text{on}(e_1, \text{Mon}) \wedge \text{drink}(j, \text{tea}, e_2) \wedge \text{on}(e_2, \text{Tue}) \wedge e_1 \in t \wedge e_2 \in t \wedge n < t)$

(69) **What has all this got to do with adjuncts?**

- a. Assume that modifiers are interpreted as conjoined with their sisters.
- b. Assume also that predicates are persistent, in the sense of (64a) above.
- c. Then we have two options: either apply Op to the matrix VP and the adjunct separately, and then combine the two, or combine the two first and then apply Op.





- e. (i) In the former case, the event variables are existentially quantified before modification, so we end up with a two-event reading.
 (ii) In the latter case, the modification takes place over predicates with abstracted event variables, so we end up with a single-event reading.
- f. (i) $\exists e_1, e_2, t. (\text{arrive}(j, e_1) \wedge \text{whistle}(j, e_2) \wedge e_1 \in t \wedge e_2 \in t)$
 (ii) $\exists e, t. (\text{arrive}(j, e) \wedge \text{whistle}(j, e) \wedge e \in t)$

(70) The latter looks a lot like our representation of a telic event in (64) above:

- a. $\exists e, t. (P(e) \wedge \text{BECOME}(\text{AT}(j, x))(e) \wedge \text{whistle}(j, e) \wedge e \in t)$
 b. $= \exists e, t. (\text{BECOME}(\text{AT}(j, x))(e) \wedge \text{whistle}(j, e) \wedge e \in t)$

The former doesn't.

(71) **So the syntax will always lead to single-event and multi-event interpretations in cases like this.**

(72) Moreover, a multi-event structure will always be appropriate if a single-event reading is.

- a. This is fairly clear with the accomplishment case:
 (i) John drove Mary crazy whistling: 'He drove Mary crazy and he was whistling as he did it': multi-event.
 (ii) John drove Mary crazy whistling: 'His whistling was the direct cause of her craziness': single-event.
- b. It's much less clear with the achievement case, but I have to assume that the ambiguity is there, even if I can't detect it:
 (i) John arrived whistling: 'He arrived and he was whistling as he did': multi-event.
 (ii) John arrived whistling: 'He arrived and he was whistling immediately before he did': single-event.

5 How to Deal with the Puzzles

5.1 Where We're At

(73) The main ingredients are:

- a. The Single Event Condition;
 b. The covert event and time arguments;
 c. The assumption that the event variable is existentially quantified below T;
 d. The template constraining possible shapes of macroevents.

(74) For a BPPA construction:

- a. Phrase structure routinely generates multi-event and single-event readings;
- b. Only those single-event readings that are compatible with the template in (56) are admissible: in all other cases, only multi-event readings remain;
- c. The Single Event Condition removes all multi-event readings in the case of extraction out of the BPPA, leaving some examples with only acceptable single-event readings and some examples with no acceptable readings at all.

5.2 The Interpretive Puzzle

- (36) a. What did John drive Mary crazy [whistling t]?
 b. What did John arrive [whistling t]?
- (40) a. John painted this picture eating apples \neq John eating apples caused him to paint a picture.
 b. *What did John paint this picture eating?
 c. John came home dripping mud all over the living room carpet \neq John was dripping mud all over the living room carpet immediately before he came home.
 d. ??What did John come home dripping mud all over? (* if the answer is *the living room carpet*).
- (75) This comes apart in the details, but it's hopefully on the right track.
- (76) a. John drove Mary crazy \approx Whatever John was doing caused Mary to become crazy.
 b. John arrived at X $\not\approx$ Whatever John was doing caused him to become "at X".
- (77) a. **The accomplishment case:** the subject's actions bring about the result state.
 b. **The achievement case:** the subject's actions do not bring about the result state.
- (78) This distinction carries across to the BPPA cases: a BPPA describes a subject's actions, but these should only be taken as causing the result state when the matrix VP describes an accomplishment, not an achievement. Hence the different interpretations of extraction from BPPAs modifying accomplishments and achievements.
- (79) Note that this explanation is only valid in the case of extractions from BPPAs: in declaratives, other readings (e.g. simultaneity of the two events) seem to be available for both, but these disappear in interrogatives.
- (80) This also gives us a handle on what goes wrong in examples like (40). In all the cases where extraction is possible, the matrix VP only specifies the nature of the culmination, not the preparatory process. This allows us to make use of the truth-conditional equivalence in (70) above.
- a. What did John arrive whistling?
 (i) $\lambda x \exists e, t. (P(e) \wedge \text{BECOME}(\text{AT}(j, x))(e) \wedge \text{whistle}(j, x, e) \wedge e \in t)$
 (ii) $= \lambda x \exists e, t. (\text{BECOME}(\text{AT}(j, x))(e) \wedge \text{whistle}(j, x, e) \wedge e \in t)$
- b. *What did John paint this picture eating?
 (i) $*\lambda y \exists e, t. (\text{paint}(j, e) \wedge \text{BECOME}(\exists x. \text{picture}(x))(e) \wedge \text{eat}(j, y, e) \wedge e \in t)$
- (81) Whereas (80a) contains two predicates of e which can be attributed to subevents arranged as in (56), (80b) contains three such predicates, and consequently no such arrangement is

possible. The Single Event Condition will therefore rule out (80b).

- (82) A similar line of reasoning rules out *what did John come home dripping mud on?*, if the answer is *the living room carpet* (40d): here, it is possible to arrange the mud-dripping and home-coming subevents in a way compatible with (56), but only if the mud-dripping process *precedes* the home-coming. World knowledge tells us that if the answer is *the living room carpet*, the dripping would have to *follow* the home-coming, so the only reading the Single Event Condition will tolerate is pragmatically implausible.

5.3 The Unlikely Antilocality Puzzle

- (43) a. ??What did John drive Mary crazy [fixing *t*]?
b. What did John drive Mary crazy [trying [to fix *t*]]?
- (83) Although (43a) is syntactically simpler than (43b), in that it contains one fewer clause, and so may be expected to allow extraction more readily on syntactocentric accounts, (43b) is *aspectually* simpler, as *trying* derives an activity from an accomplishment (*fix*). As such, only (43b) automatically describes an event of the correct aspectual shape to fit alongside *drive Mary crazy* in a template like (56). However, *fixing* can be coerced to give an interpretation for (43a) identical to (43b). Once this happens, (43a) doesn't seem so bad.

5.4 ...And Back to Tense

- (84) a. Tense existentially quantifies a time variable introduced by Op;
b. Op existentially quantifies an event variable introduced by V;
c. So, if the adjunct is tensed, any event variables within the c-command domain of T are already existentially quantified.
d. This makes them unavailable for modification rules like predicate modification or event identification.
e. So the matrix VP and the adjunct VP will always describe independent events, giving us a configuration essentially like (50c).
f. This violates the Single Event Condition, yielding ill-formedness whenever extraction occurs.

6 Conclusion

- (85) a. Absolute islands exist: the edges approach can do a very good job of approximating CED effects but it falls down on patterns like that in EModE.
b. CED effects are not a unified class: both subjects and adjuncts can allow extraction independently of each other, and subject to different well-formedness conditions.
c. Multiple Spell-Out theories of CED effects do not have the flexibility to capture these patterns. A nonunified, interface-based approach seems more suited here.

- d. In particular, a theory according to which single events define absolute islands captures many facts about the distribution of extraction from BPPAs in English which look likely to remain a mystery on a purely syntactic approach.

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